

QUANTUM INDUSTRY: CHALLENGES

Commercial interests are narrowly focused

- Little support for the development of new science and technology
- Primary focus on 'fast' (5 year) path to qubits without a similar path to application
- Strong risk of 'falling flat' without supportive, broad R&D quantum portfolio

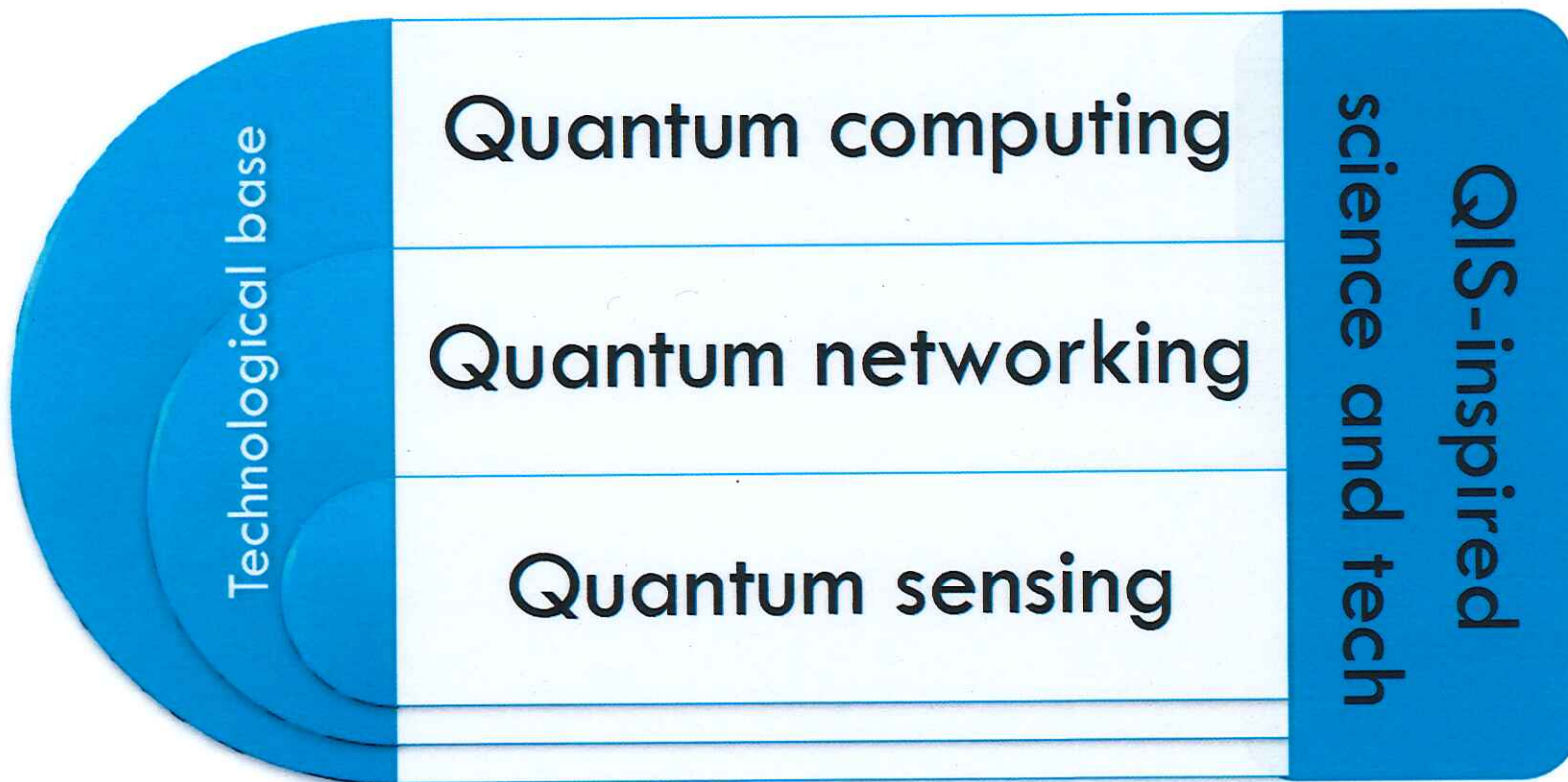
Quantum requires a highly trained, interdisciplinary workforce.

- Traditionally generated through universities, supported by basic research grants
- Weak support in QIS from the engineering, computer science communities
- Companies rarely invest in the 5-year training a PhD level requires; also rare are 2-year masters investments

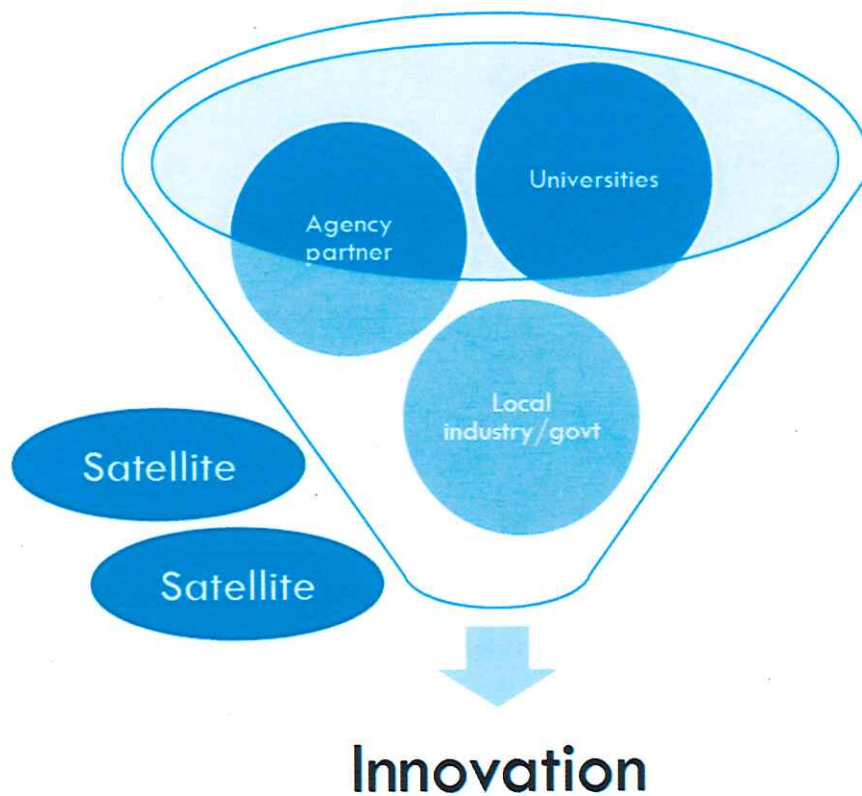
Quantum requires collaboration in the pre-competitive space

- Many aspects of the opportunity space are unknown
- Companies are presently willing to engage and share, but hype can shut this down
- Venture capital investment needs to understand revenue is 10 years away

WHAT DOES QUANTUM INFORMATION SCIENCE POLICY COVER?



QUANTUM TECHNOLOGY INSTITUTES?



In addition:

Novel tech transfer experiments
Regular interface with OEM community
Skills training and transfer

Physical co-location
Dedicated incubation space
Long-term focus

WORKFORCE IMPROVEMENTS?



Curriculum and program development

- NSF and other agency support of QTI partners and satellites
- Workshops and reports in support of quantum engineering

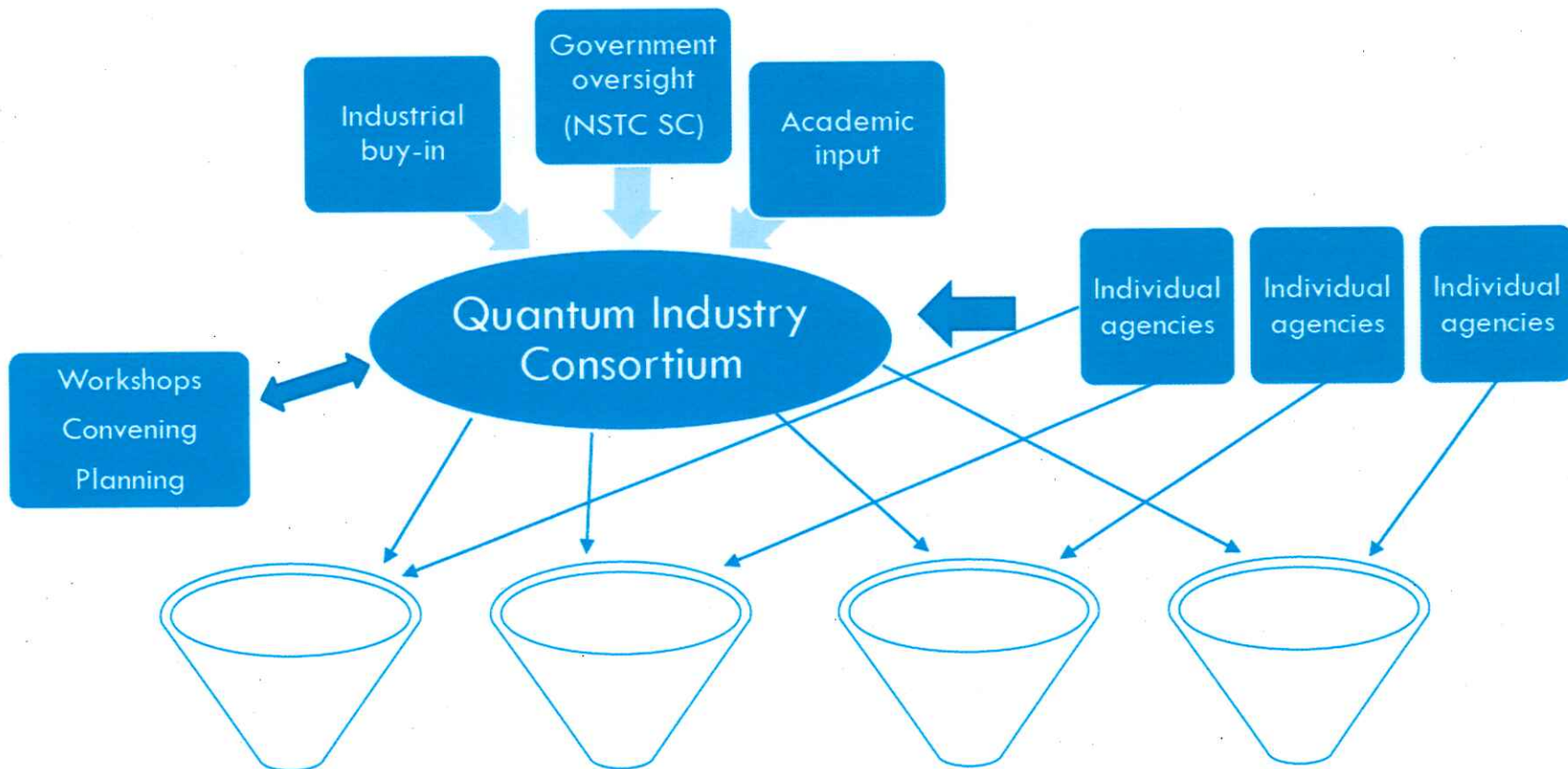
Grand challenges

- Provide a landscape of opportunity – prizes, but also planning
- A regular series convening key partners to continue tradition

Internships and externships

- National labs and industrial partners
- Incubation and acceleration fellowships

QUANTUM RESEARCH COORDINATION?



OUR CHOICE

Invest in our
talent

Enhance workforce

Drive market opportunities

Enable new jobs in science, engineering, and beyond

Develop
public-
private
partnerships

Realize government multiplier for innovation economy

Gain efficiency via division of responsibility

Two-way knowledge transfer for improved R&D

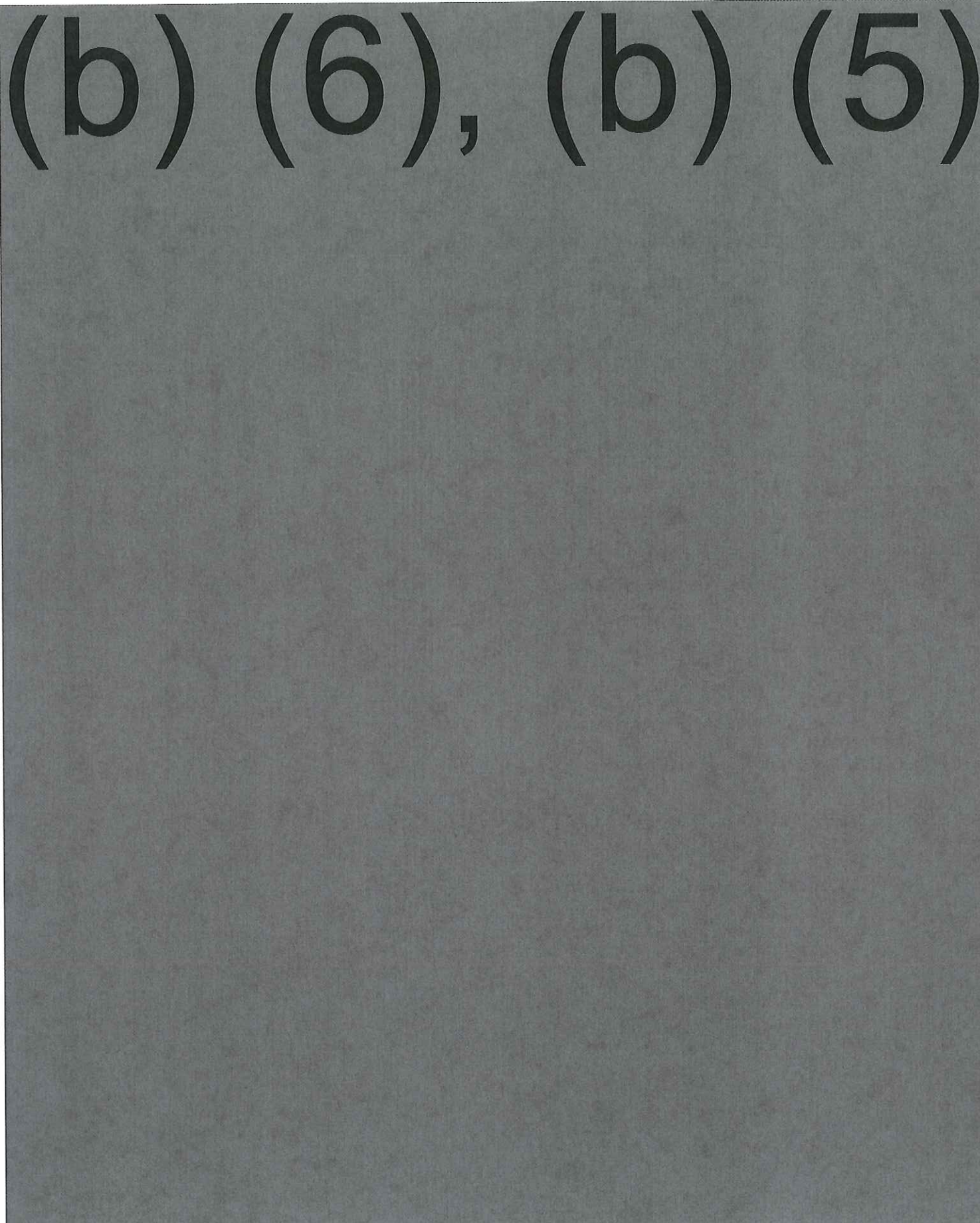
Lead
through
smart policy

STEM effort for quantum engineering, masters

Regular coordination across boundaries

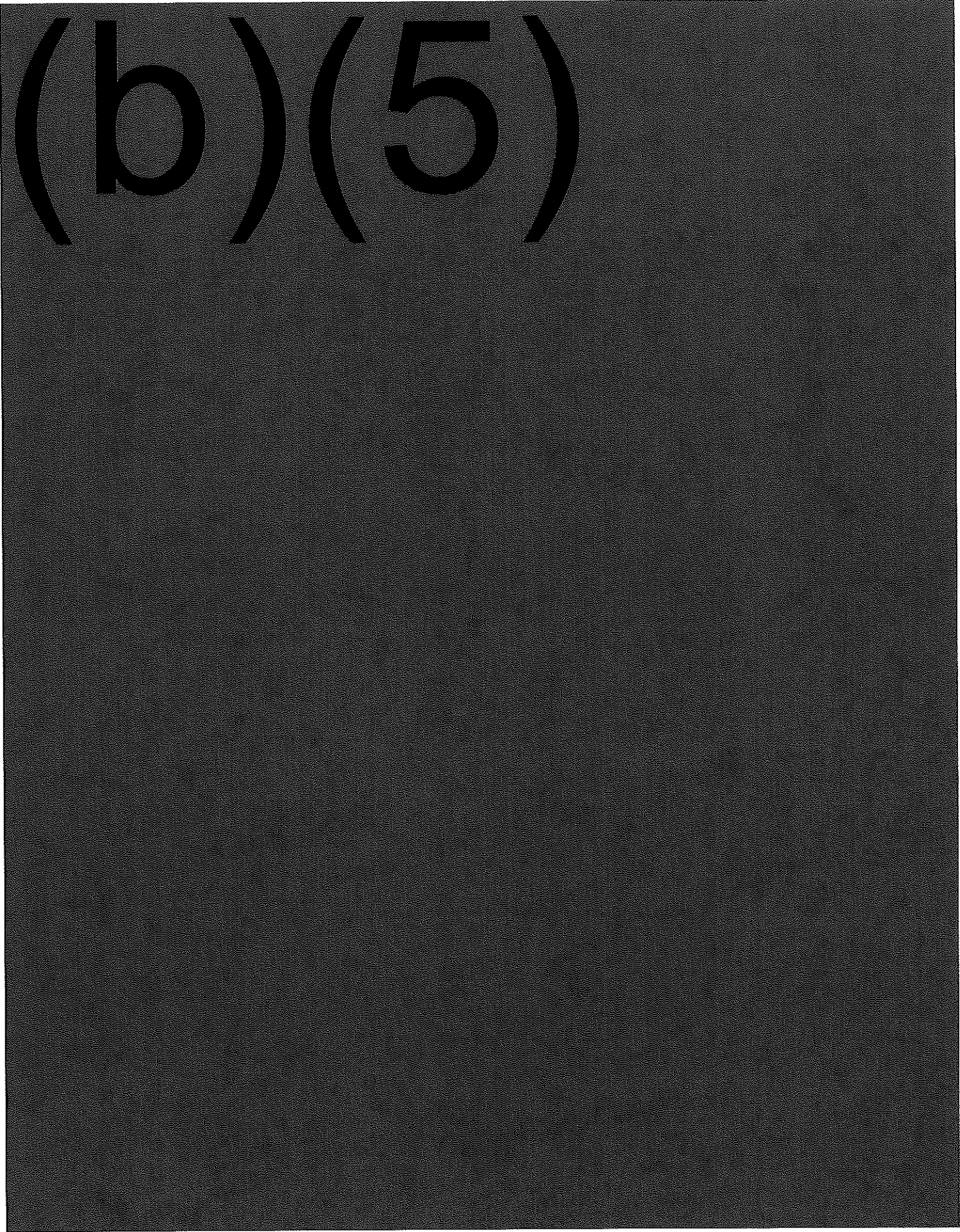
Continuous refactoring with improving knowledge

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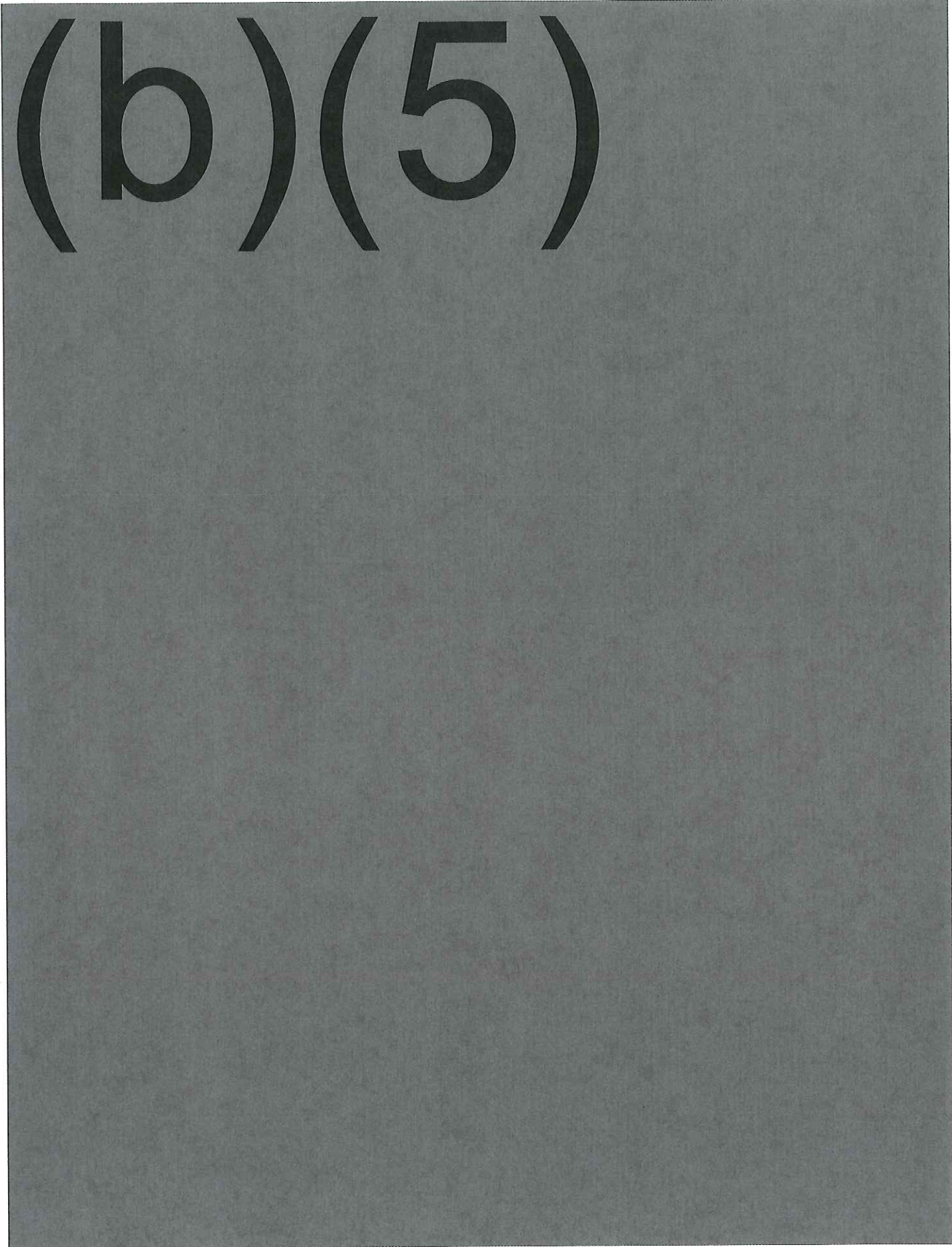
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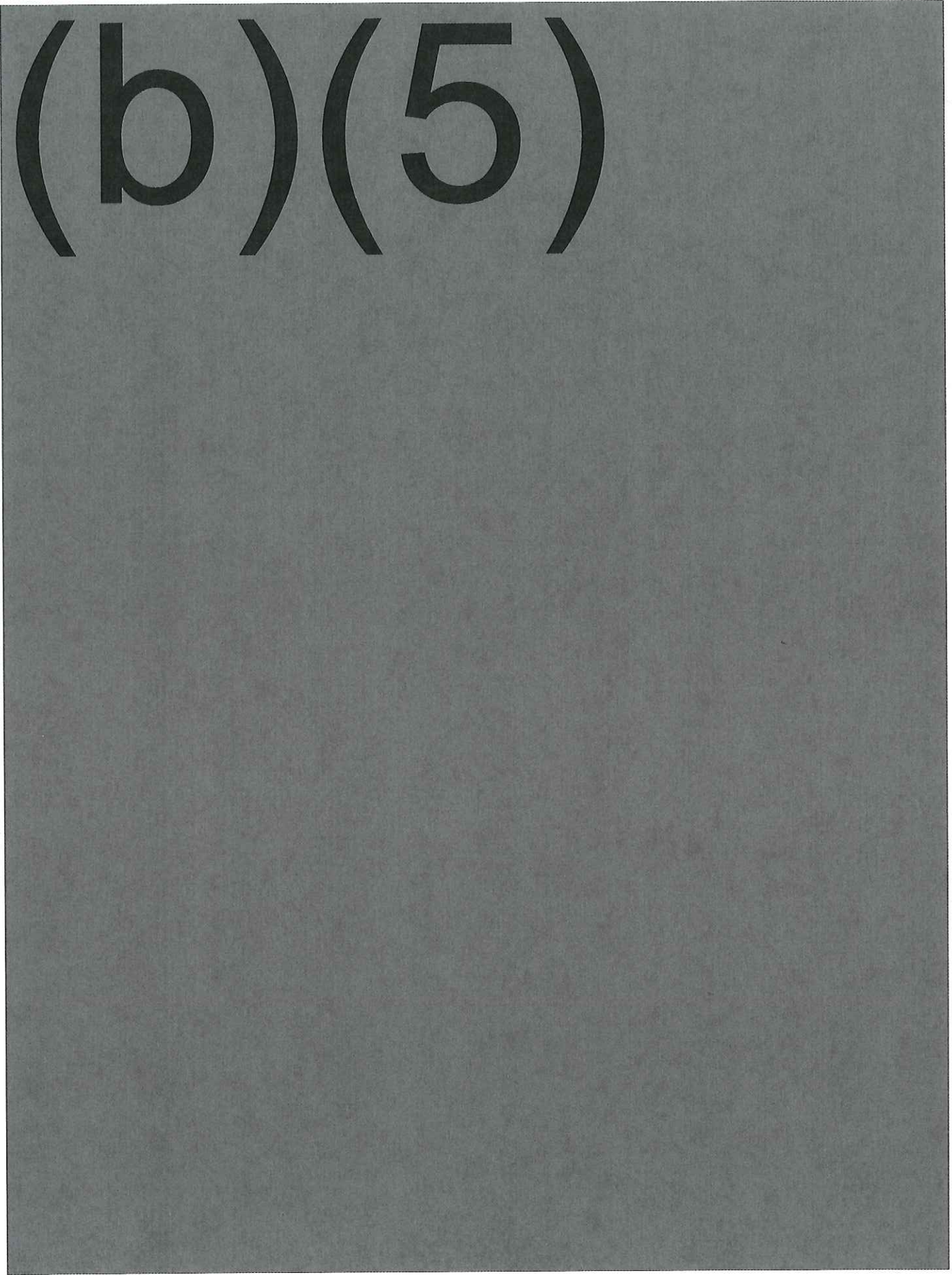
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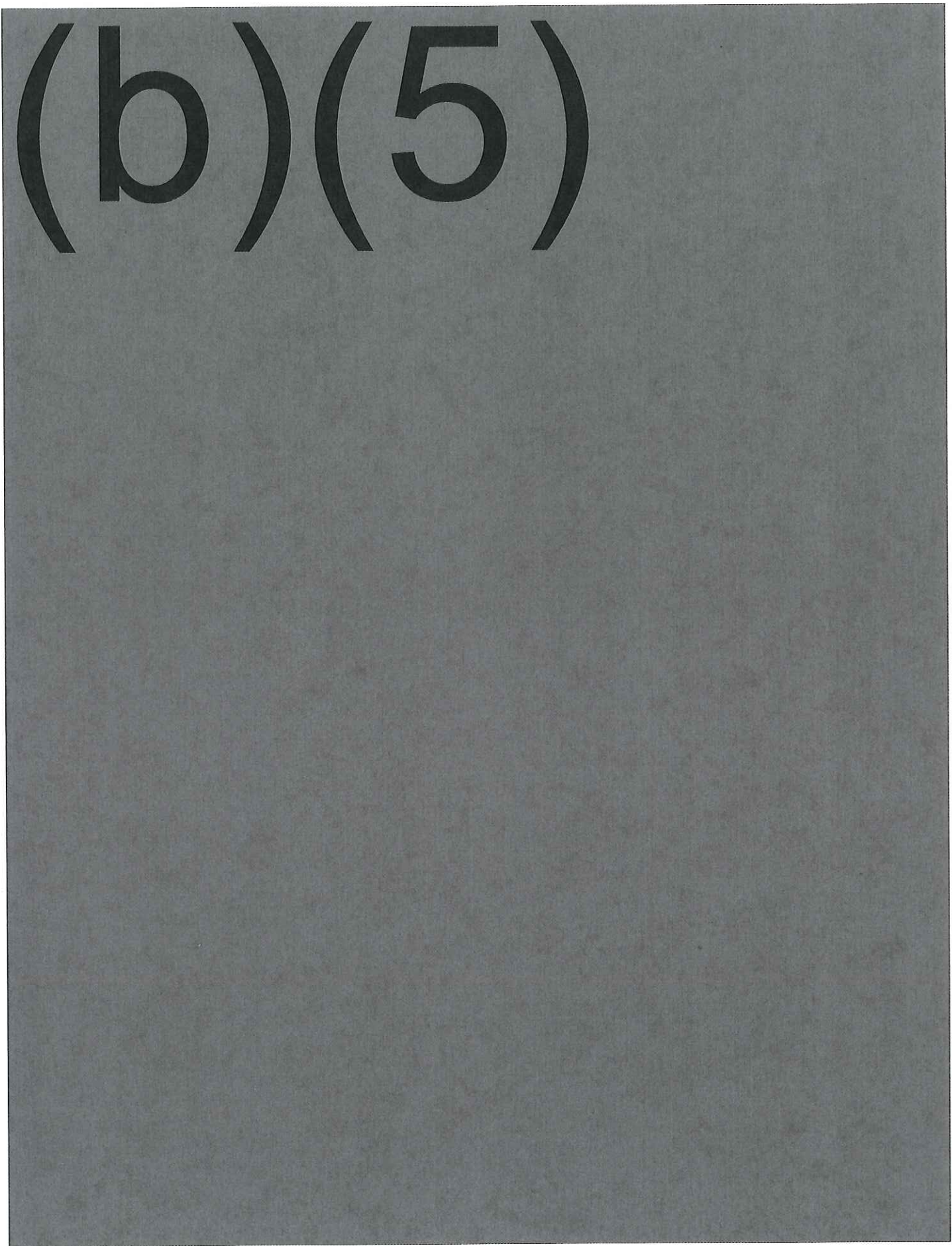
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THE WHITE HOUSE

WASHINGTON

September 5, 2018

You are cordially invited to *The White House Summit on Advancing American Leadership in Quantum Information Science* (QIS), to be held on the afternoon of Monday, September 24, 2018.

American researchers have long led cutting-edge research and development (R&D) in QIS. Today, we are at the cusp of a new quantum revolution, as the field matures and decades' worth of research leads to new discoveries.

The Trump Administration recognizes the critical role that QIS will have for the long-term health and security of the Nation, with advances in sensing, networking, and computing, and has identified QIS as a priority area for investment in fundamental R&D. To coordinate these efforts, the National Science and Technology Council established a subcommittee on QIS to develop a national strategy for this field. Now is the time to work together for our future.

This summit is the first opportunity for scientific, industrial, and government leaders to convene and discuss:

- Quantum-Enabled Science: The 10-Year Horizon of QIS
- Developing a Quantum-Smart Workforce
- Partnering with Industry for our Quantum Future

Join us for a productive dialogue on how the United States can maintain its competitive edge in this revolutionary field.

Please RSVP to Weston Loyd (Weston.Y.Loyd@ostp.eop.gov) by September 12, 2018. Additional details will be forthcoming.

Respectfully,

A handwritten signature in black ink, appearing to read "Mike Kratsios", with a stylized flourish at the end.

Michael Kratsios

Deputy Assistant to the President for Technology Policy
The White House



NSTC subcommittee on QIS

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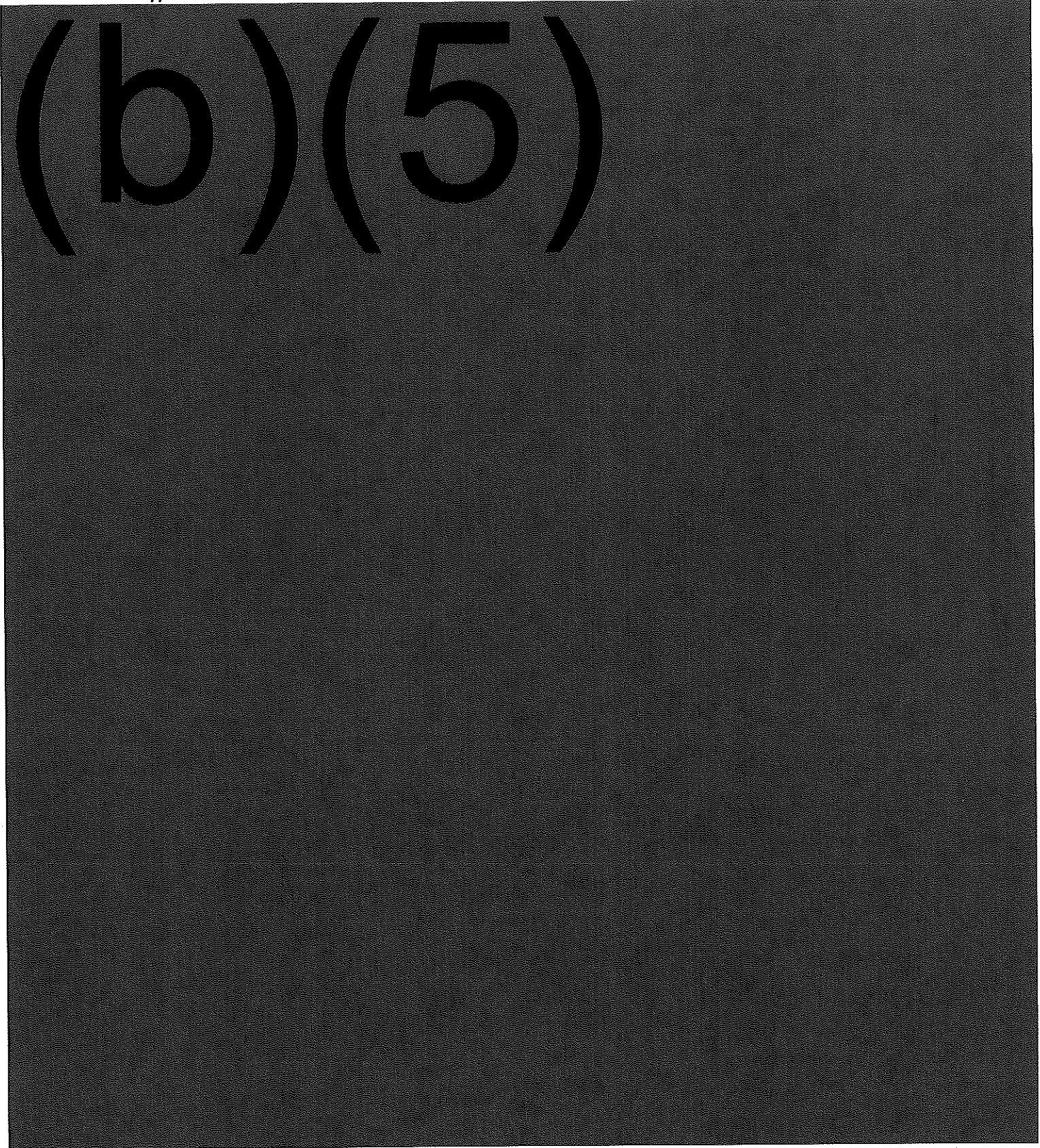
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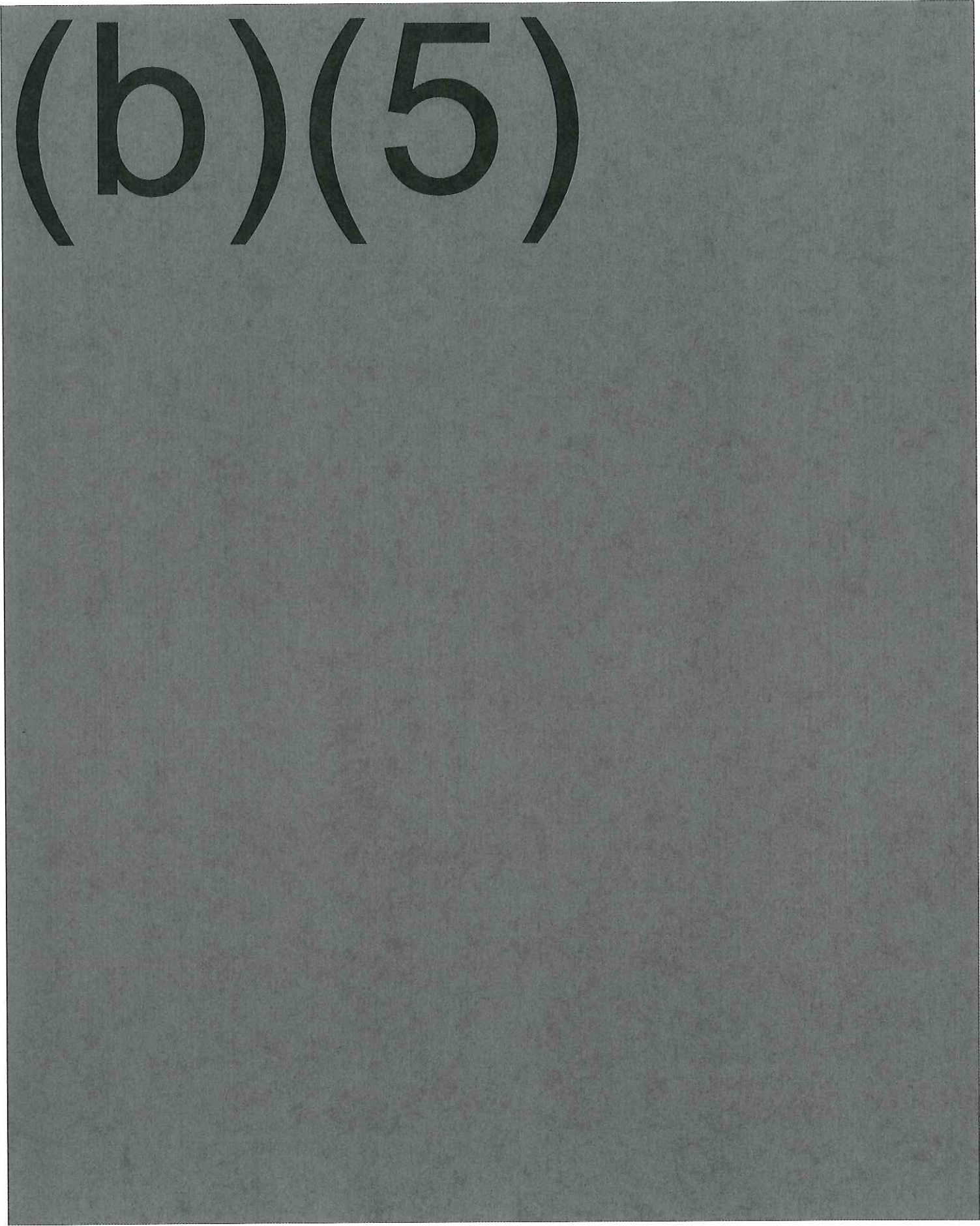
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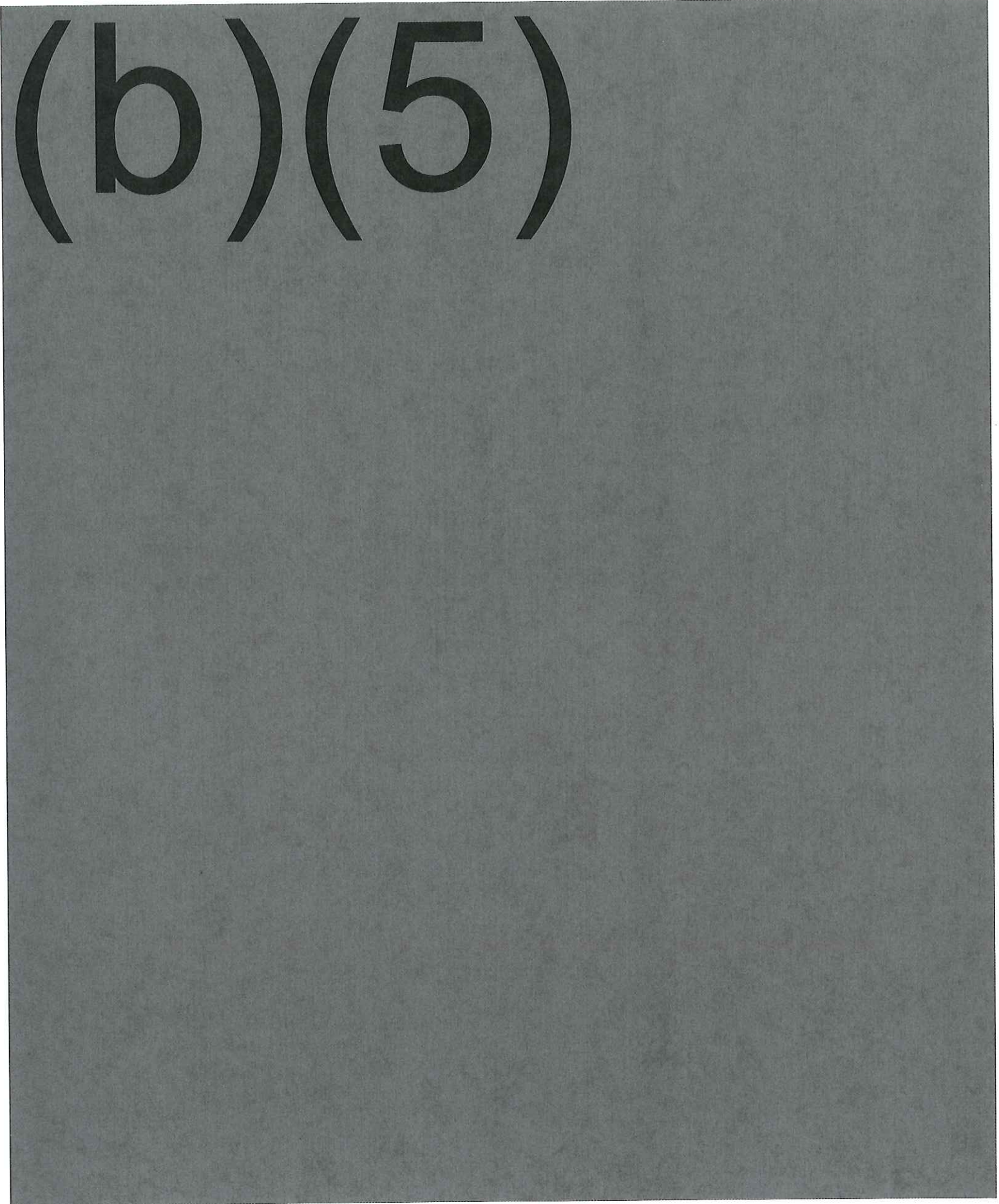
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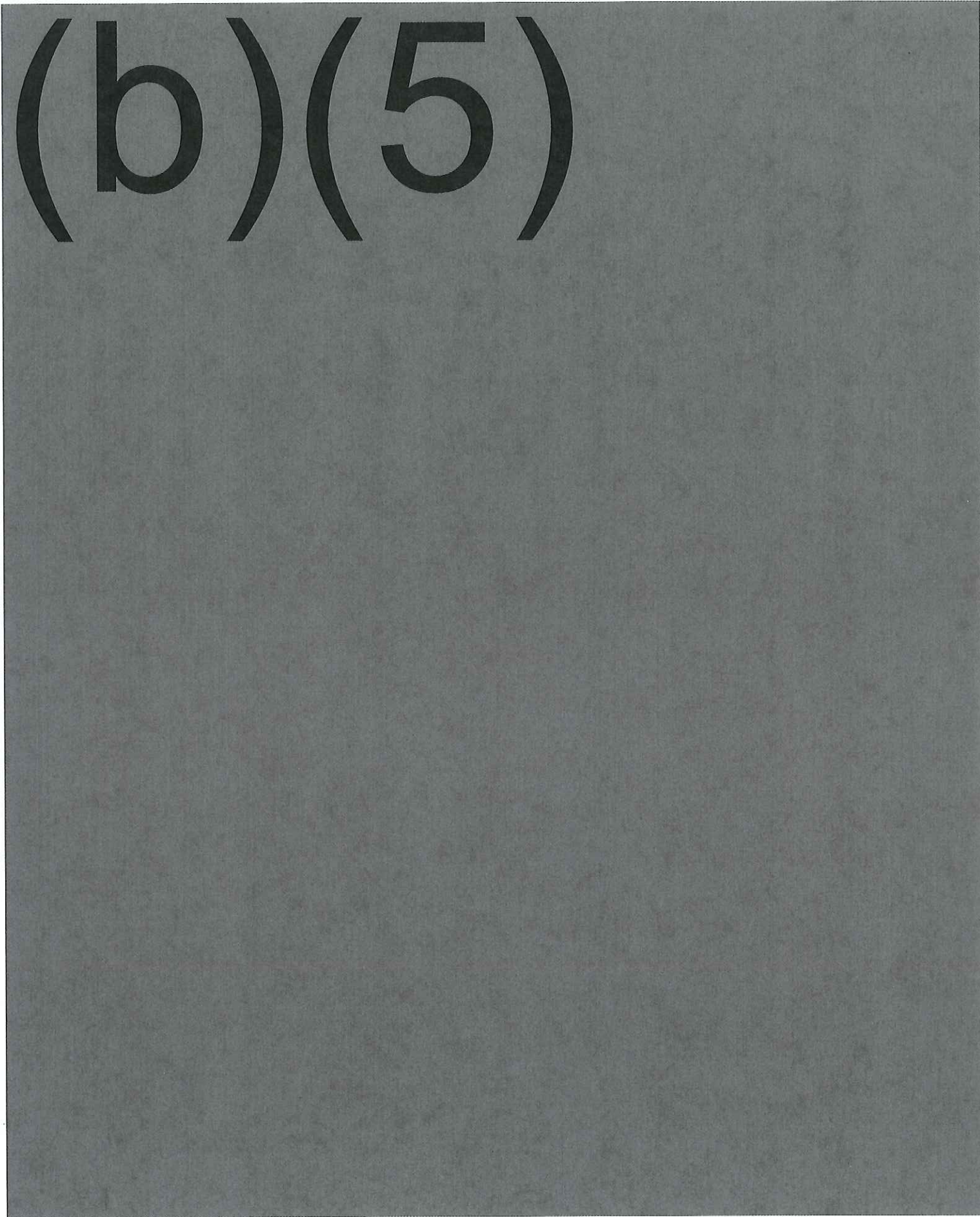
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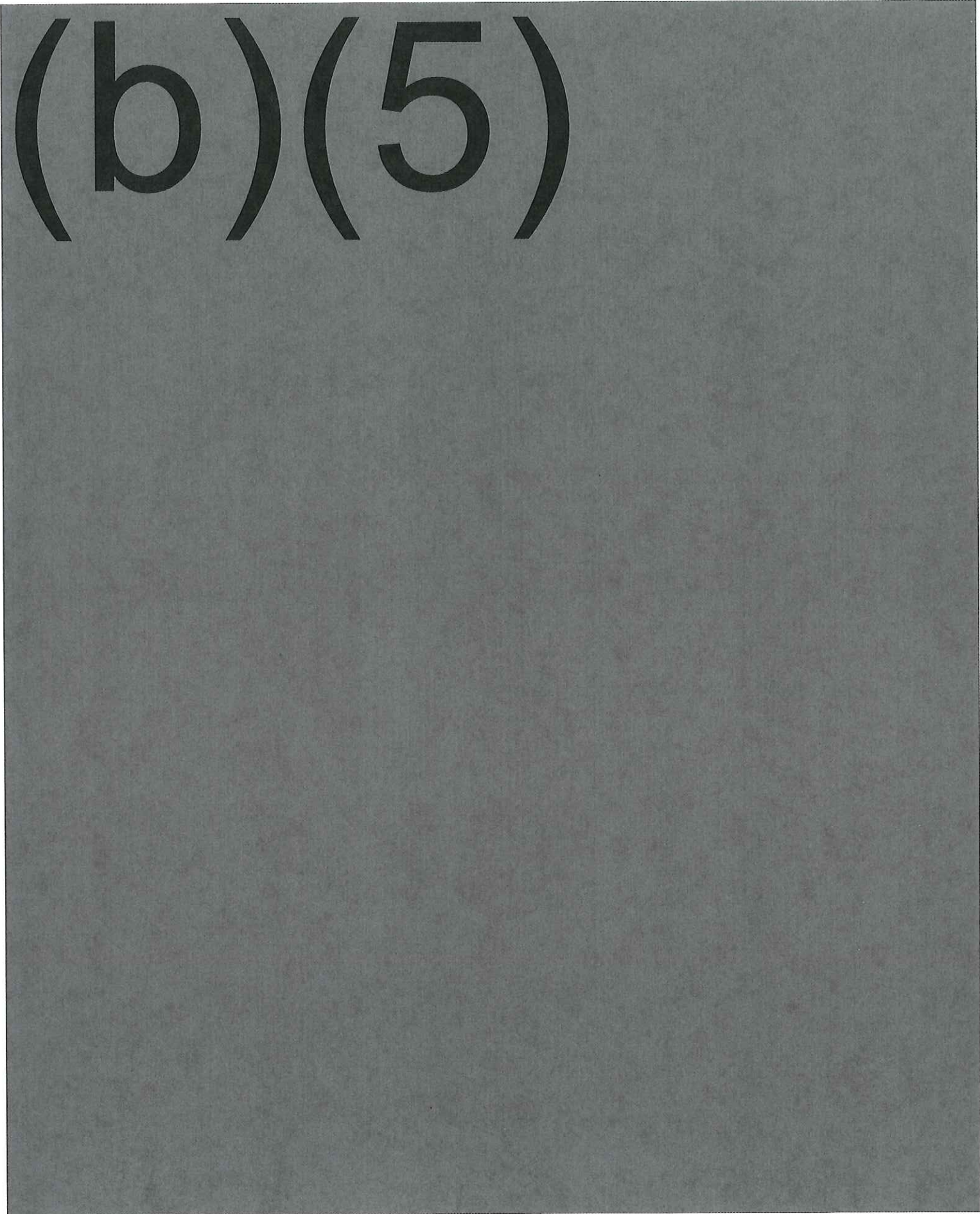
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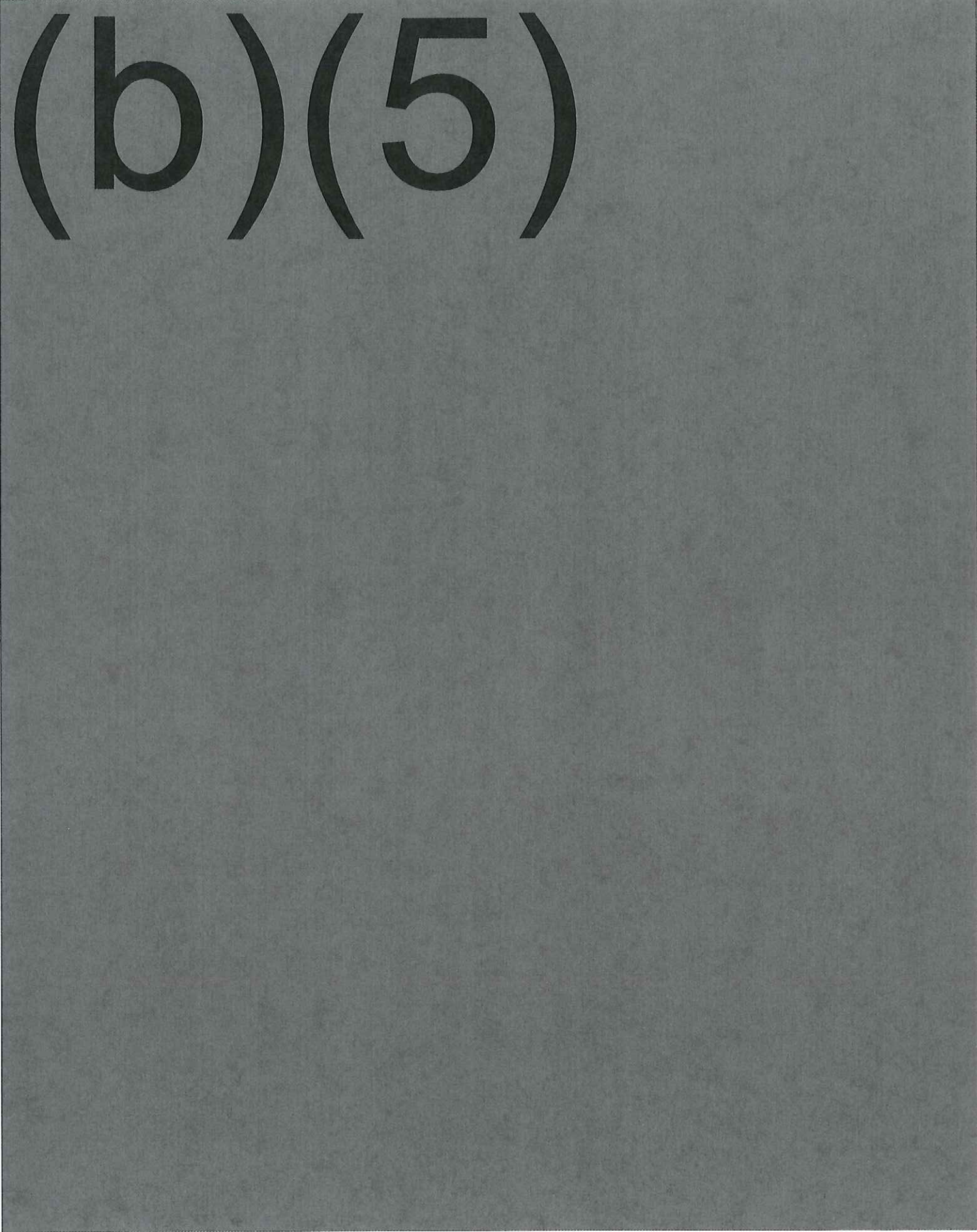
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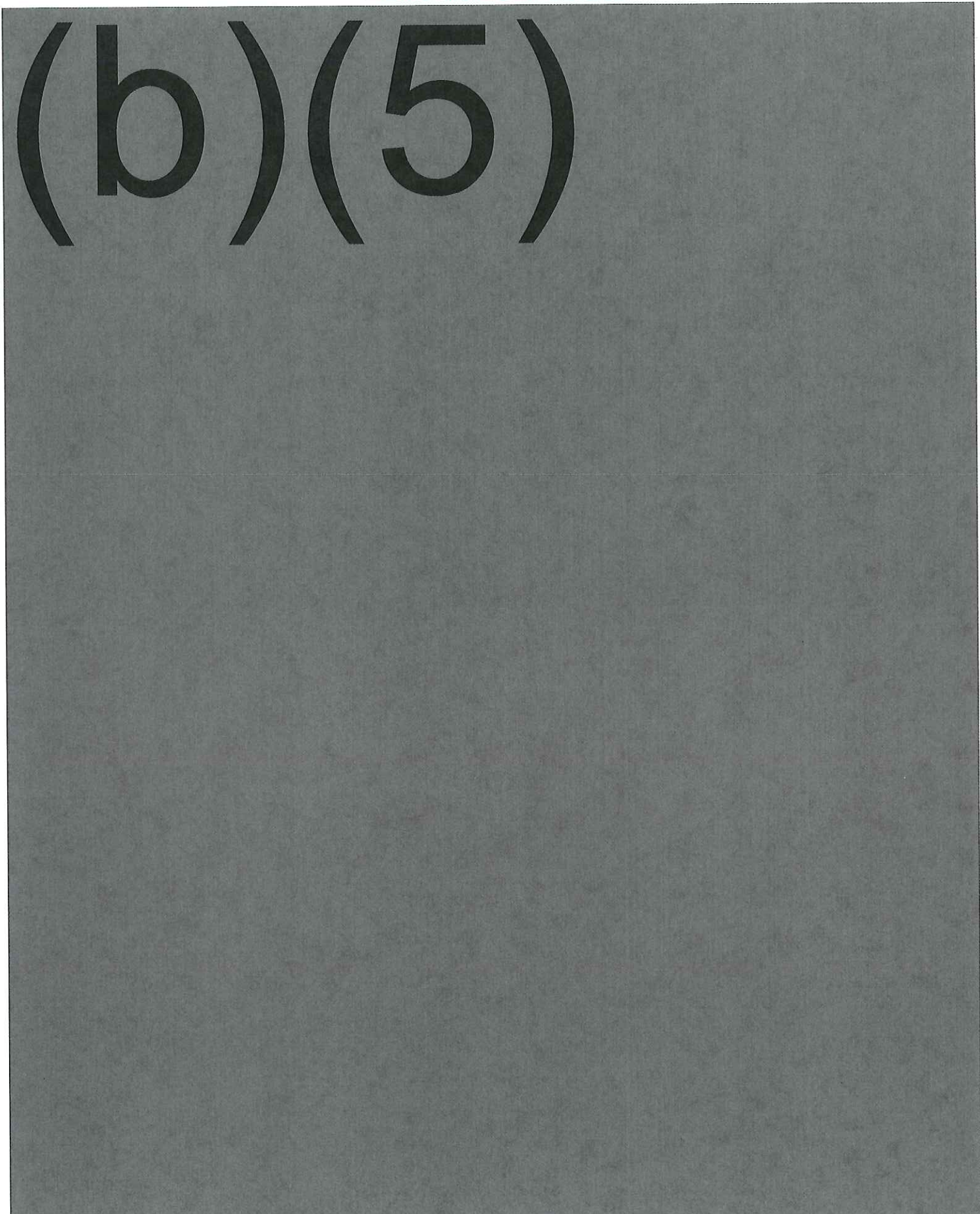
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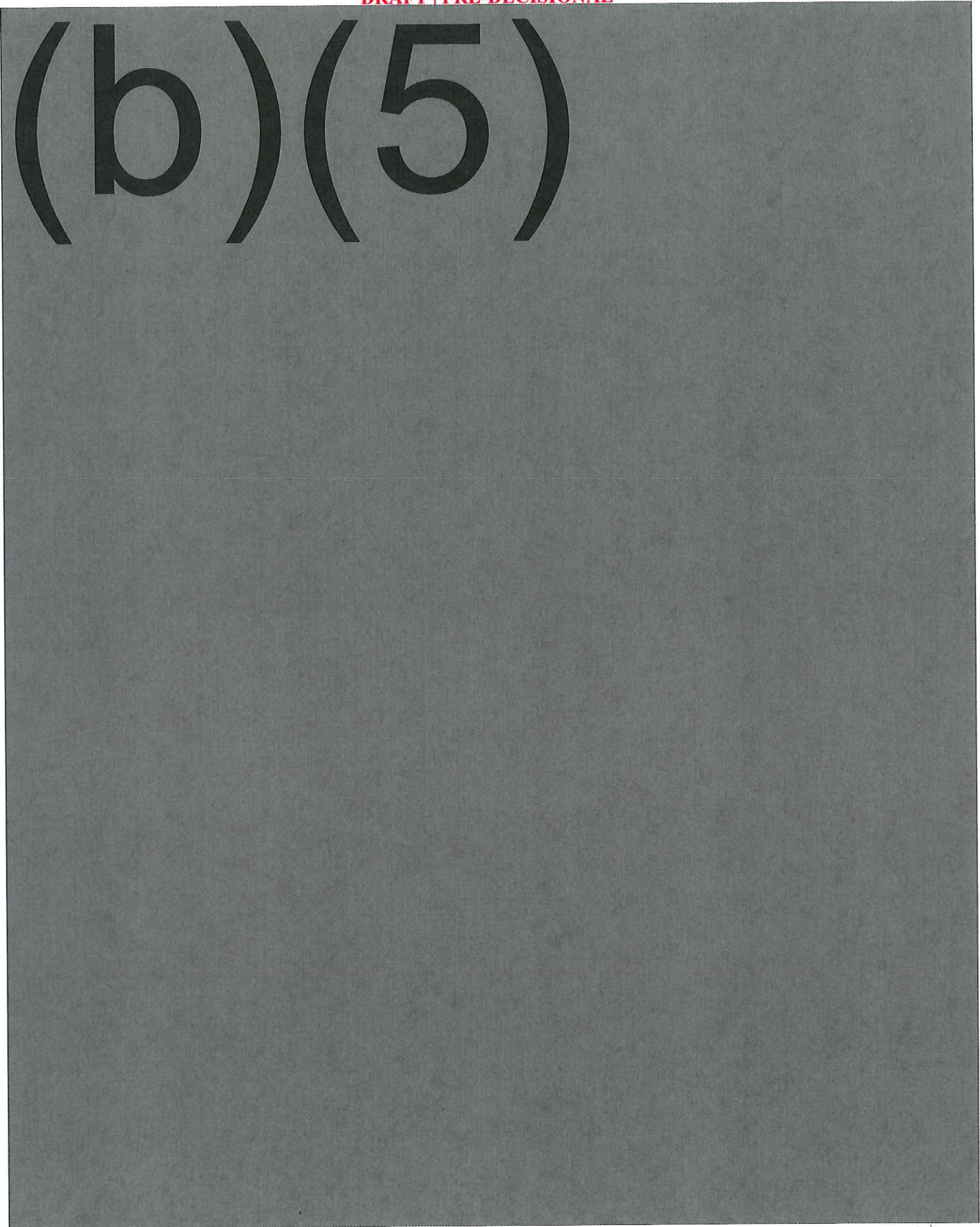
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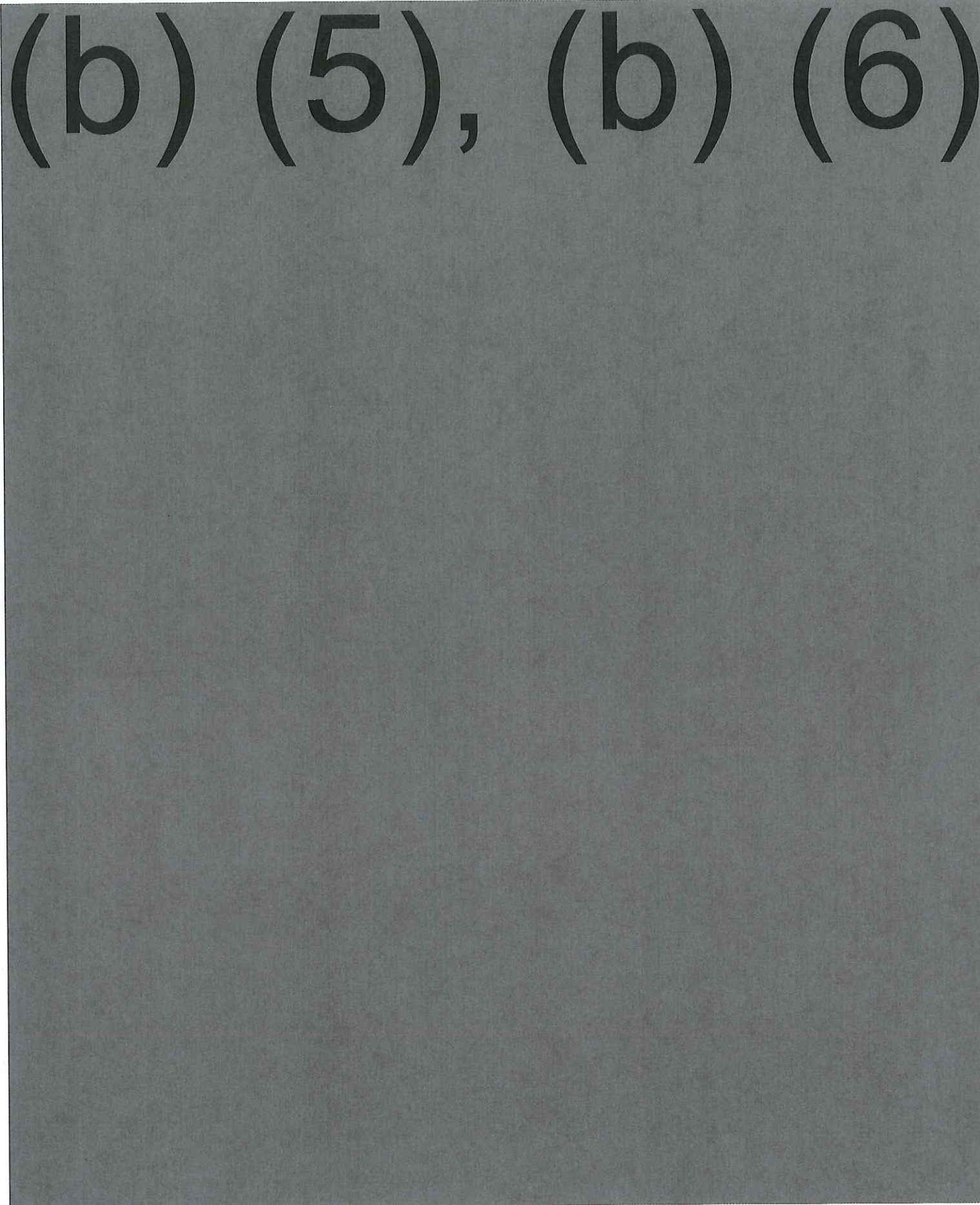


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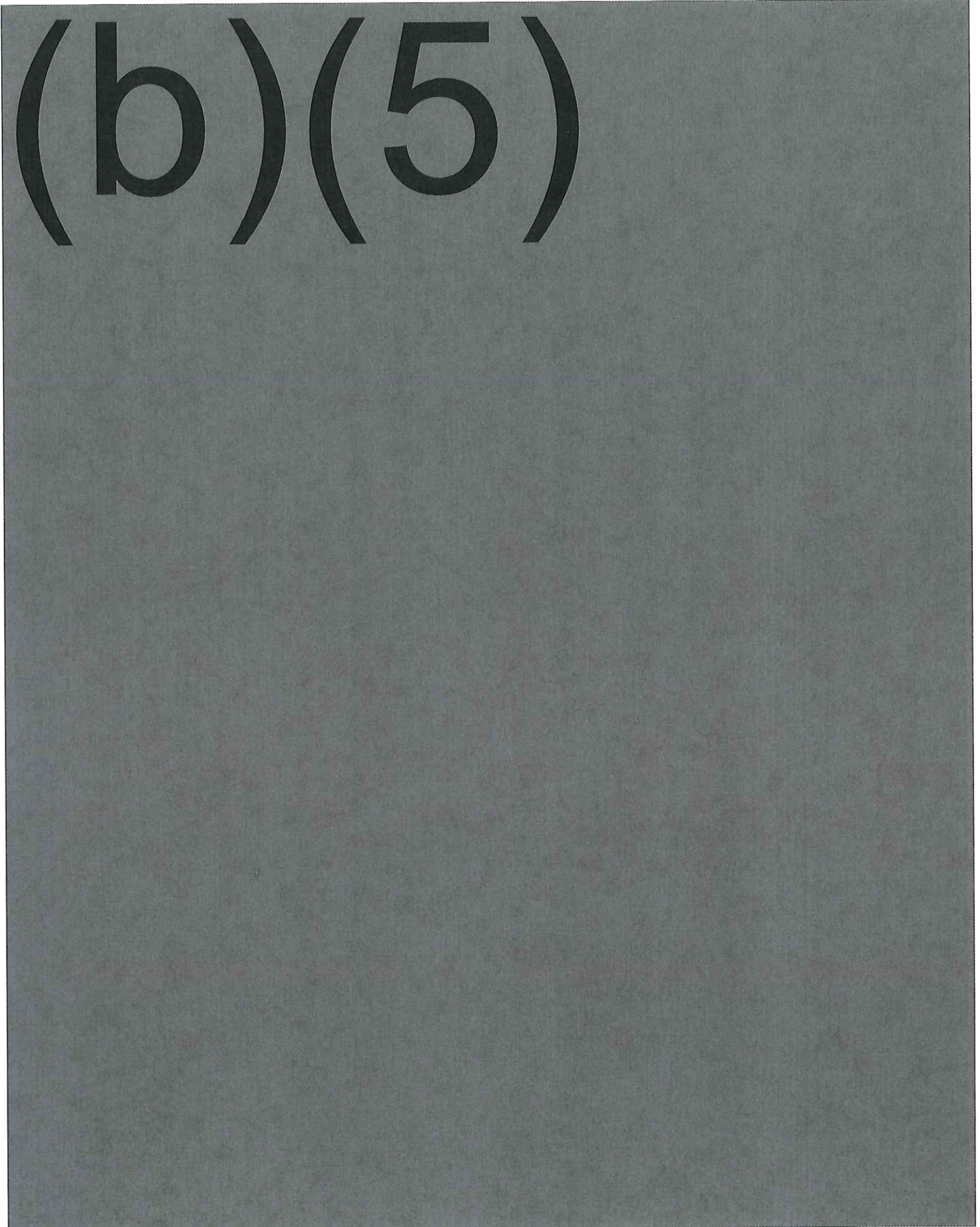
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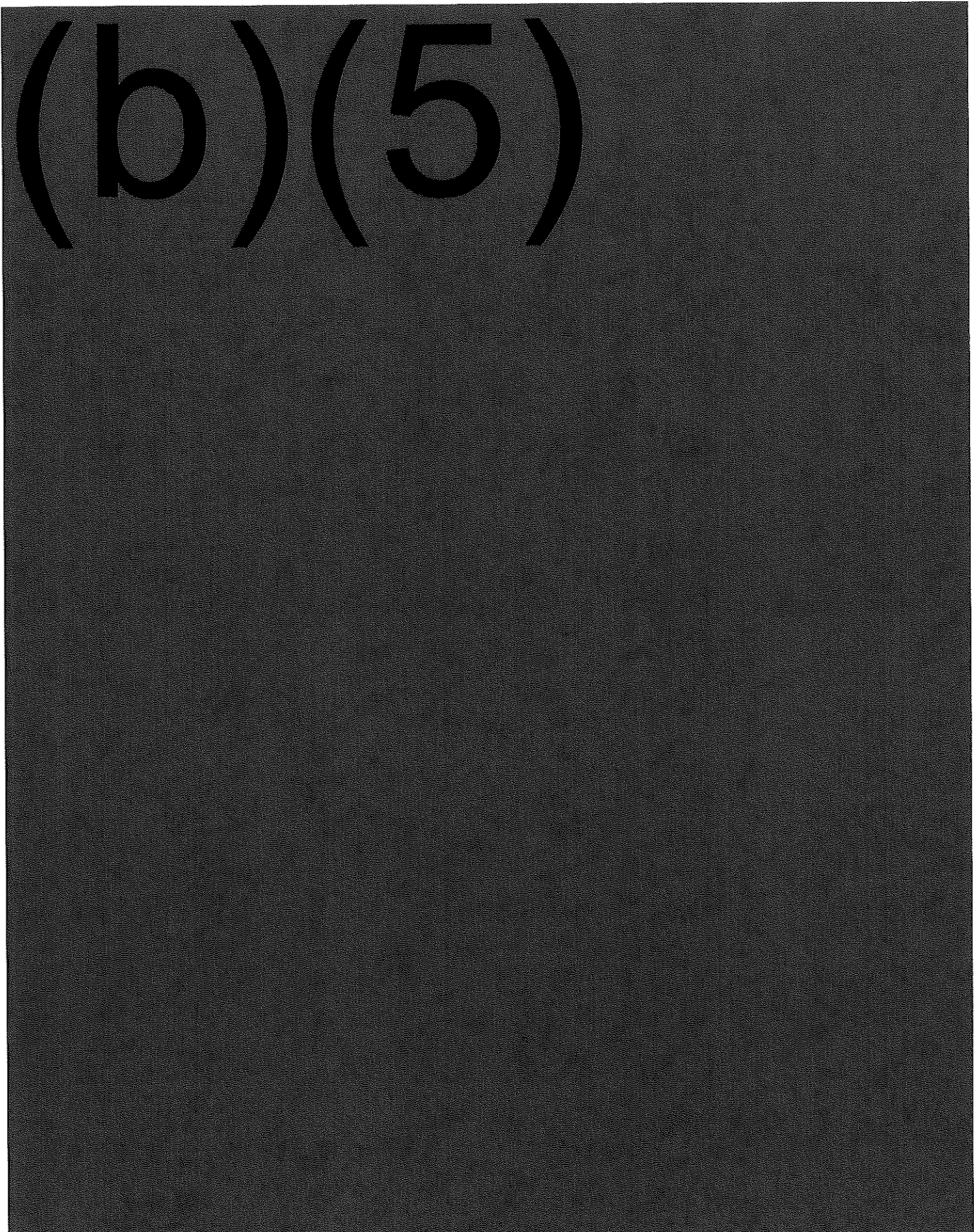
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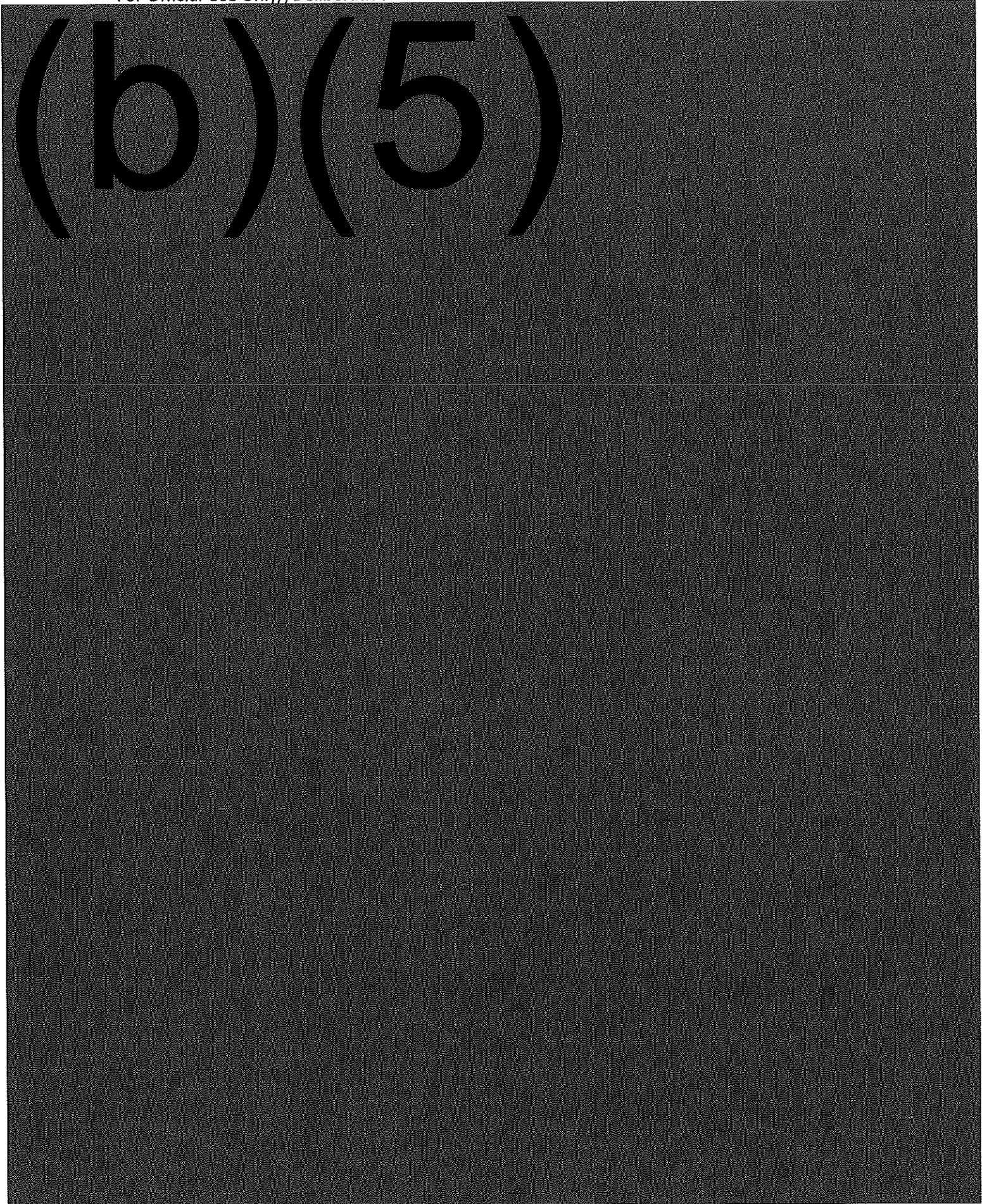


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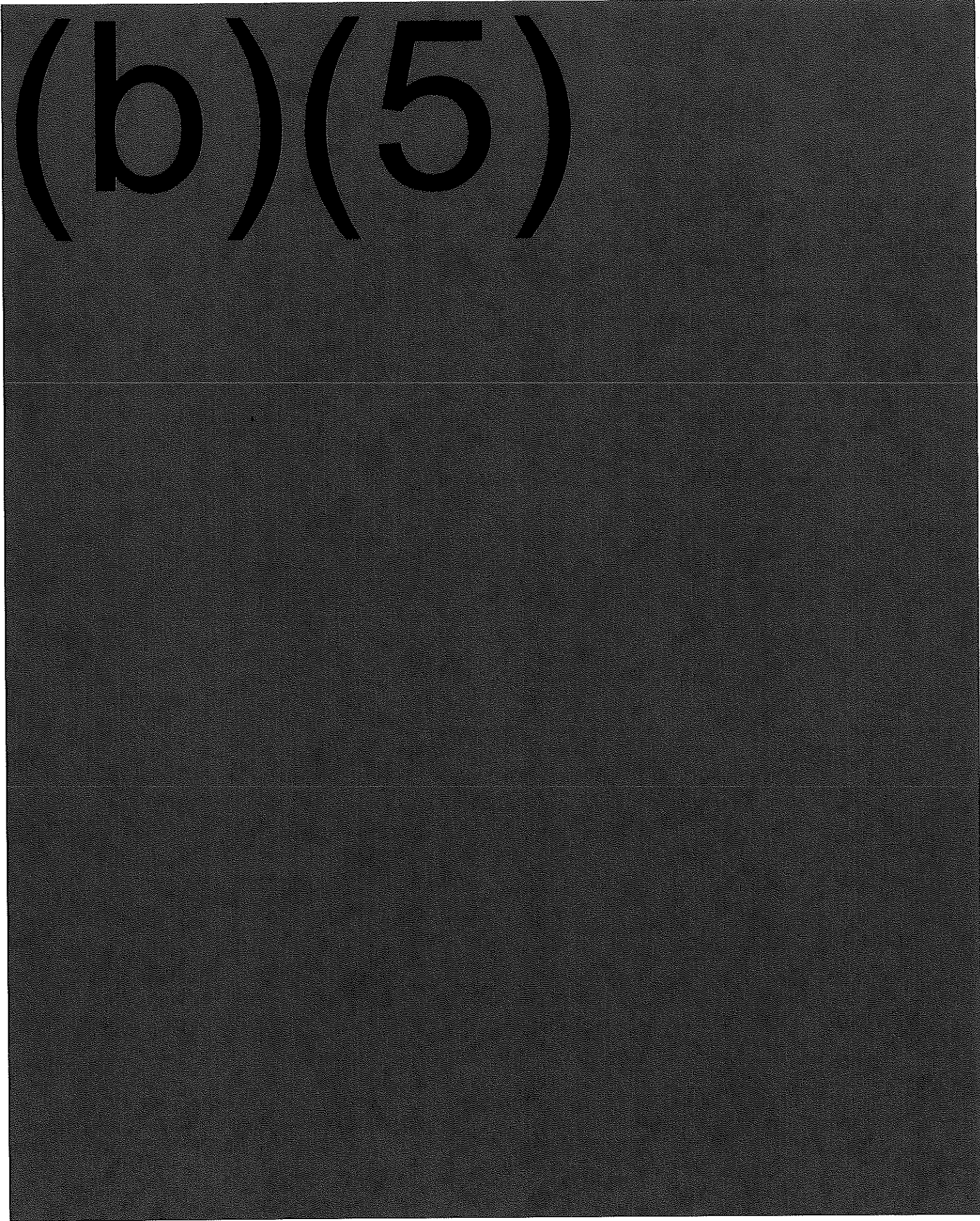


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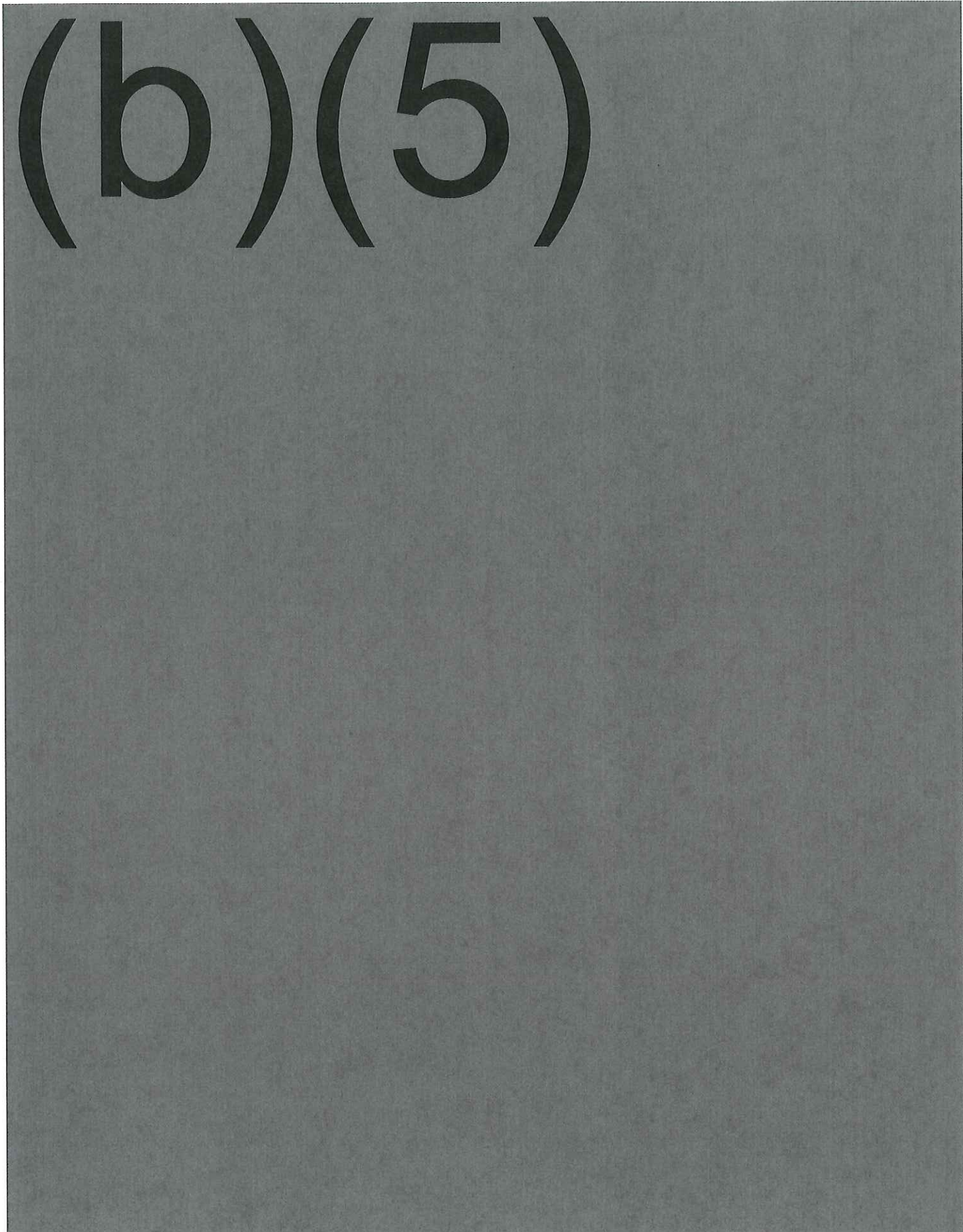
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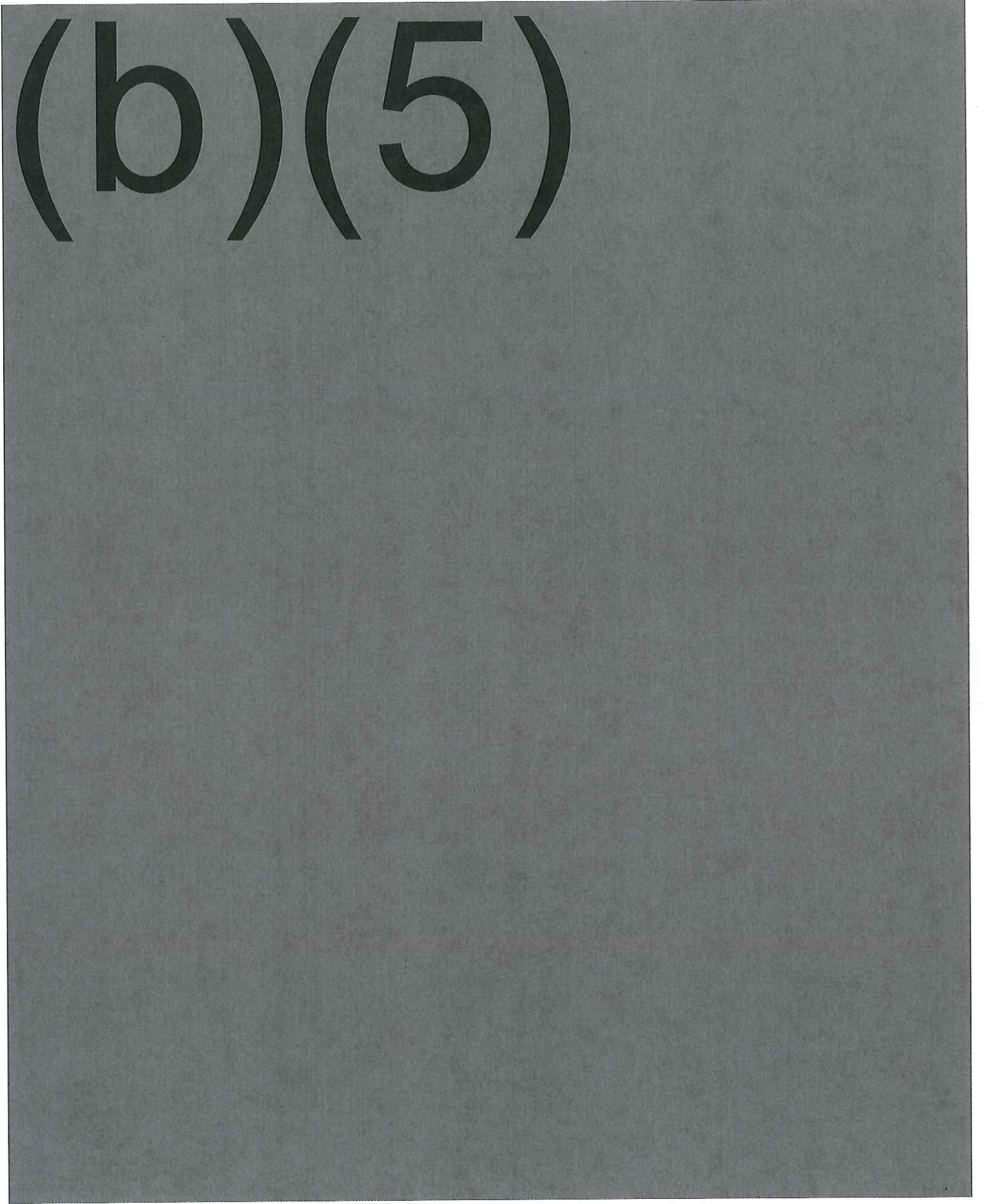
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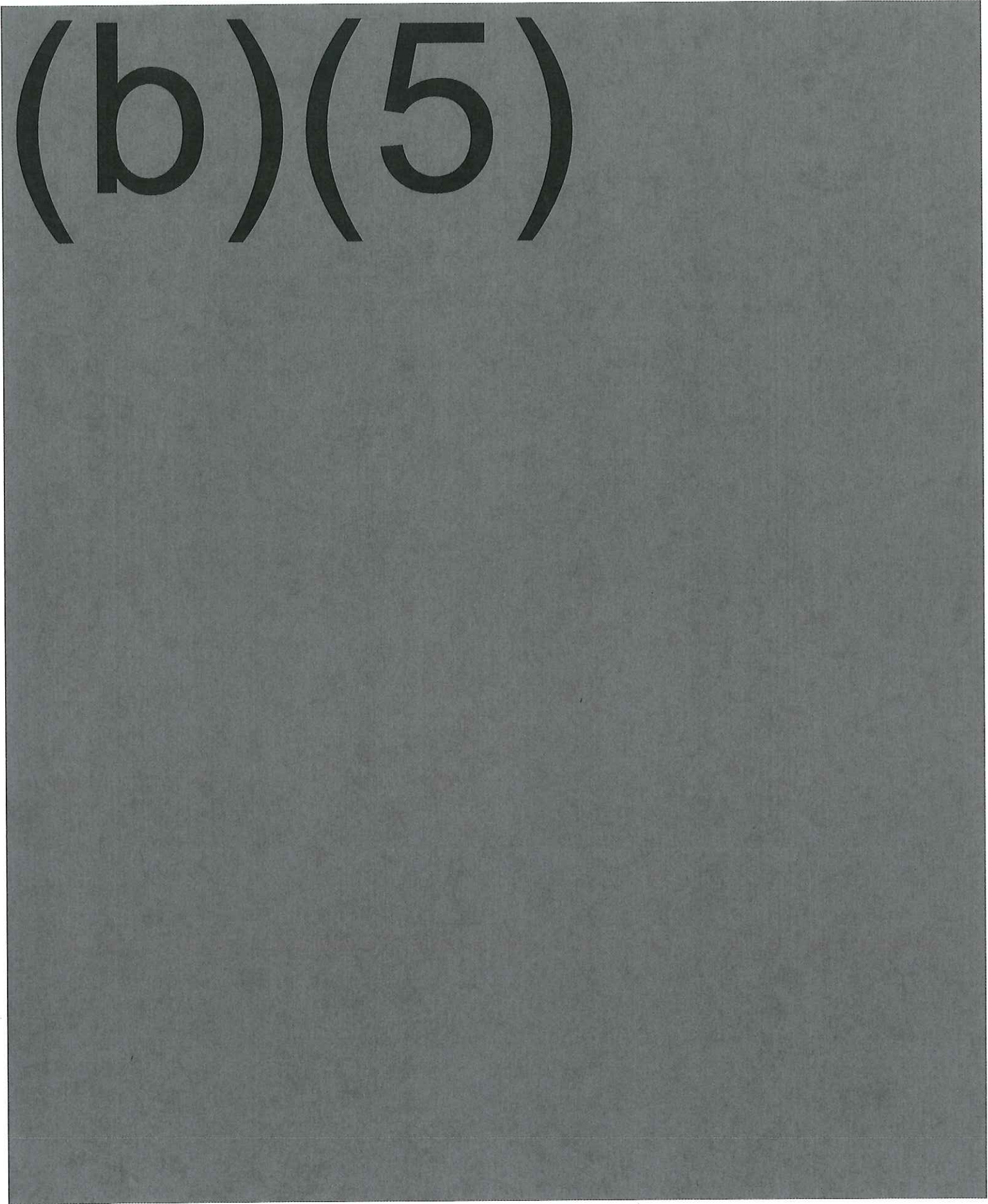
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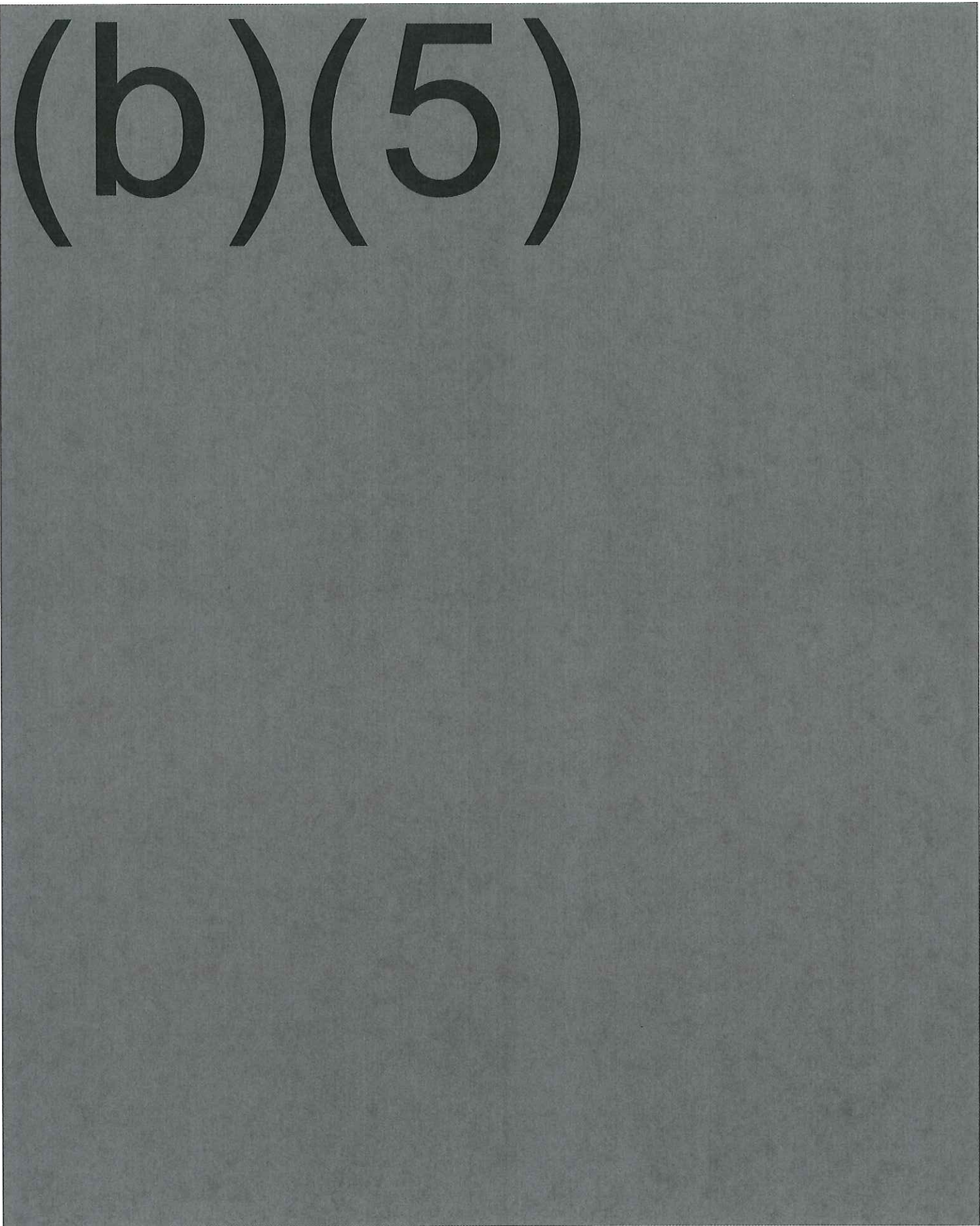
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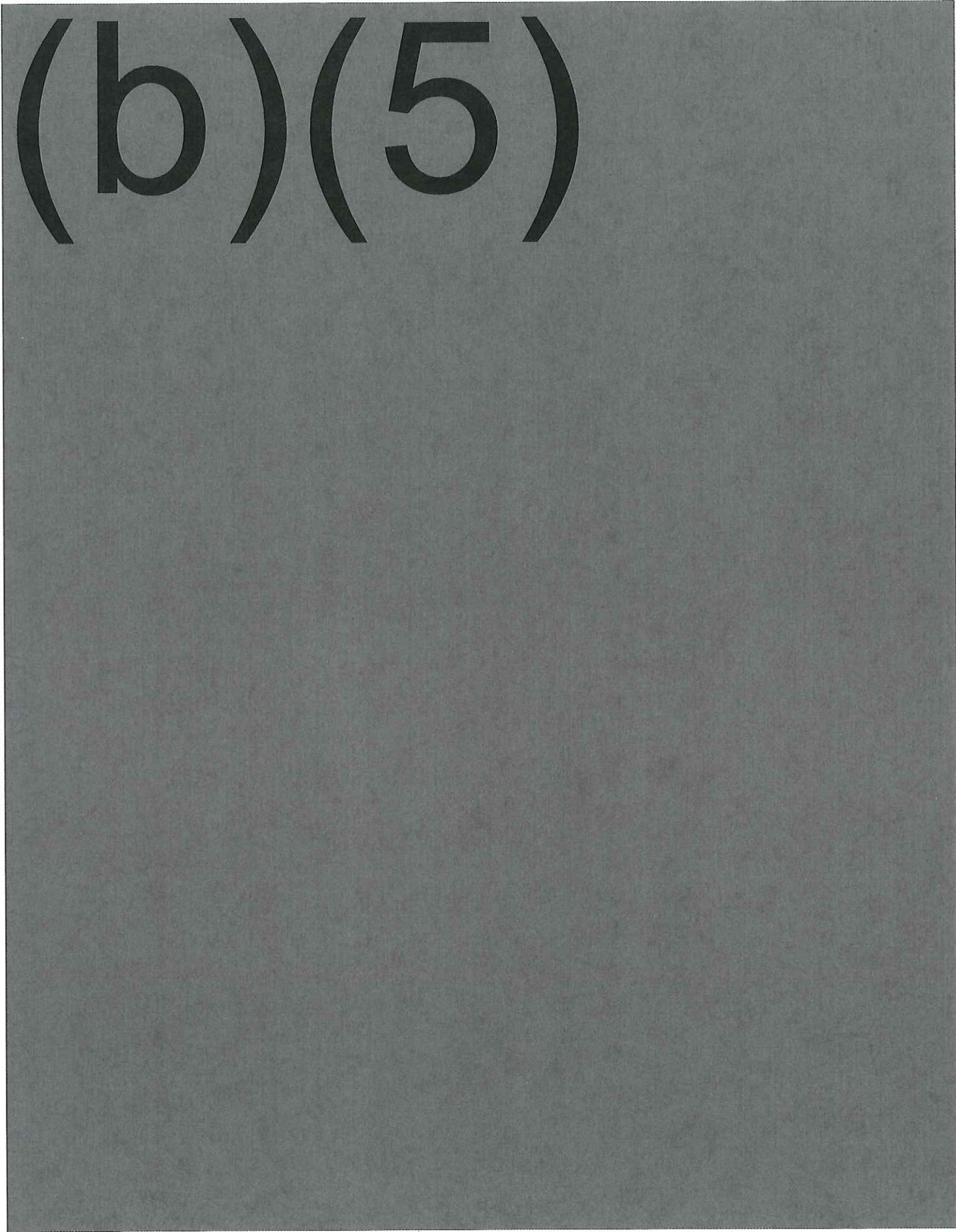
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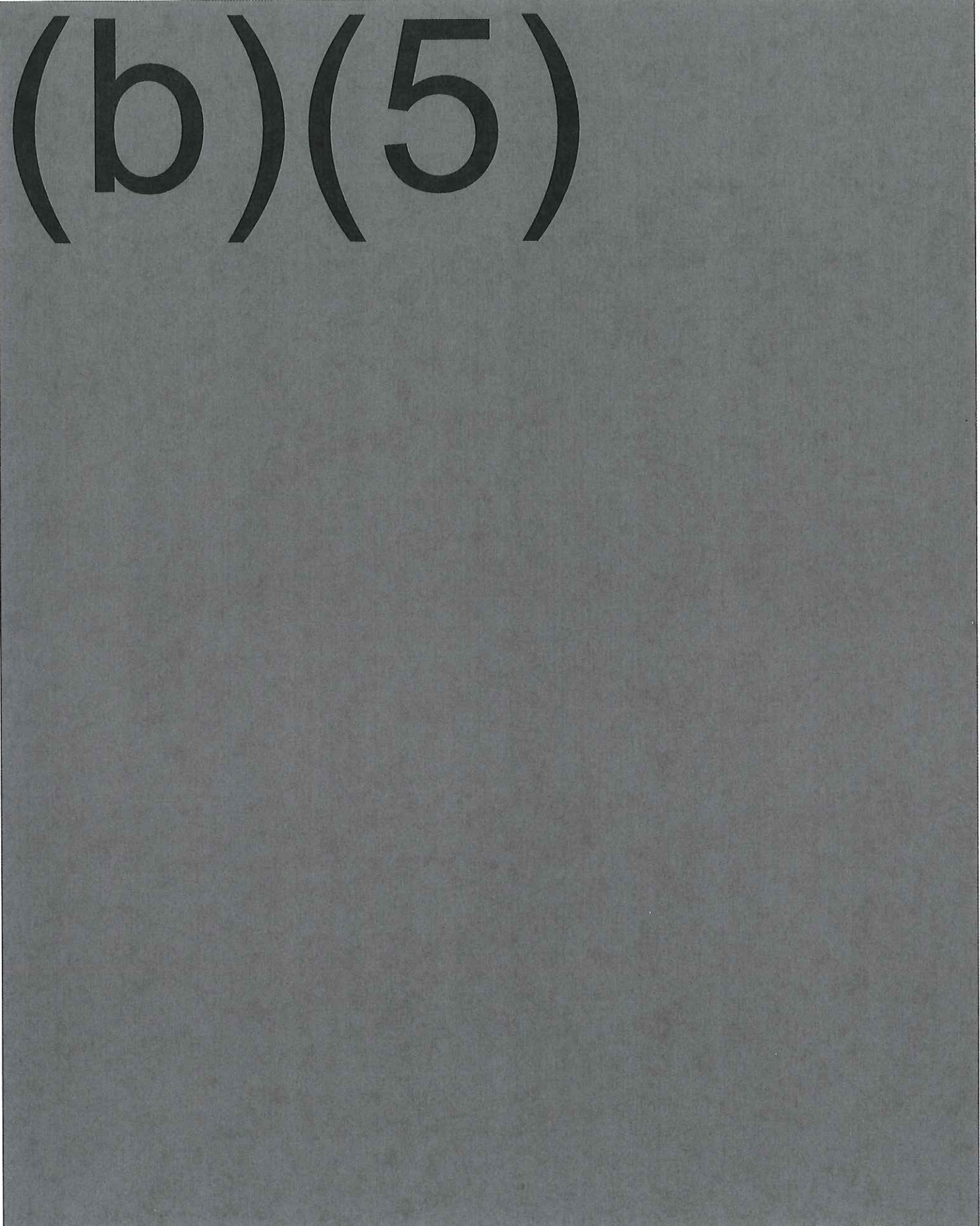
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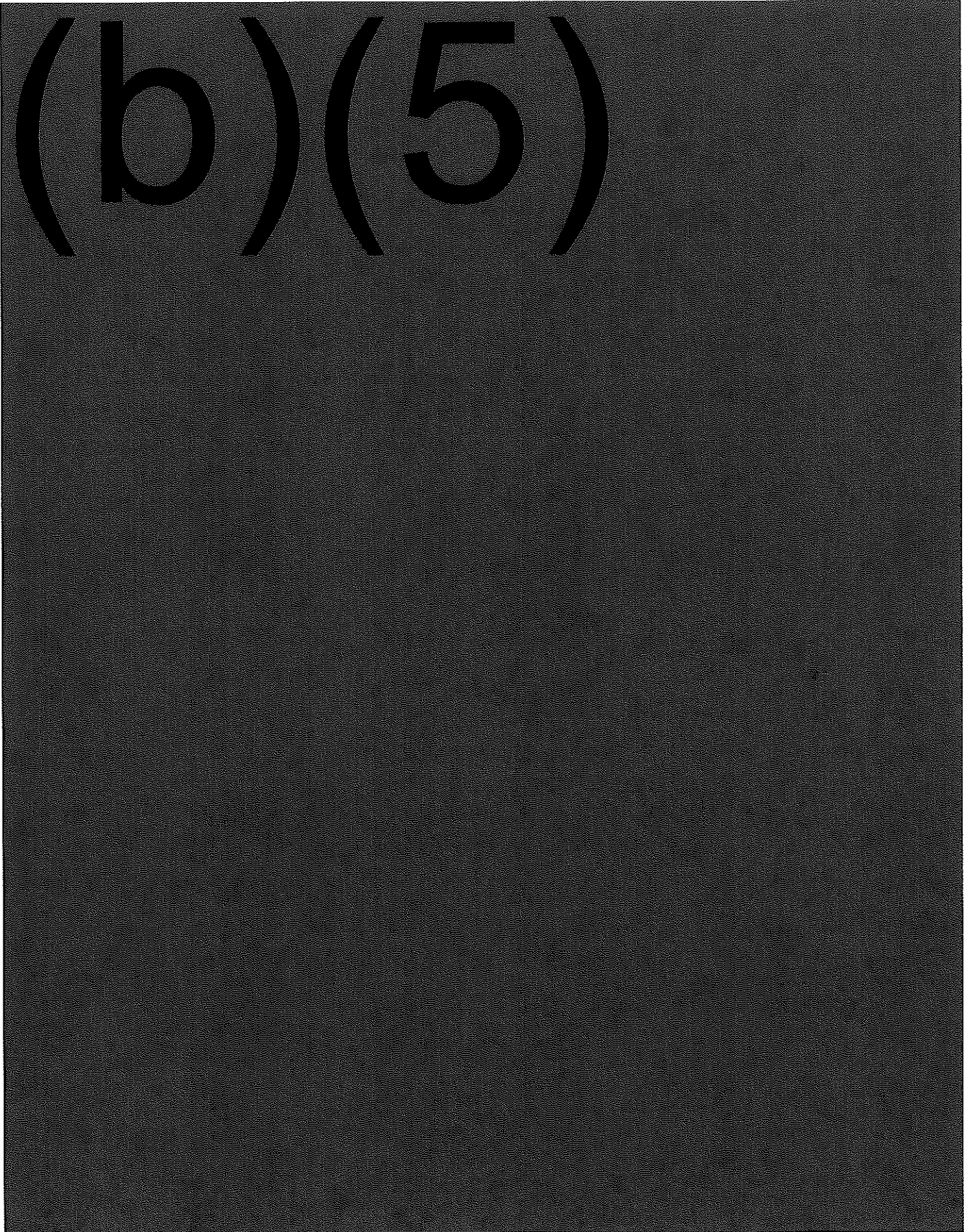


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Weekly report, 4/17/2018

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